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[Continued on next page]

(54) Title: INSECTICIDAL PROTEINS SECRETED FROM BACILLUS THURINGIENSIS AND USES THEREFOR

	10	20	30	40	
1	M K N R F S K V A L C T V P A L M L M L S T I A T P S M S V F A A E T T S P K L N X				TIC901p
1	M K Y K S S K V A I C T L S A L M L M L S T I A T P S M S V F A A E T T S P K L N X				TIC1201p
1	M K Y K S S K V A M C T L S A L M L M L S T I A T P S M S V F A A E T T S P K L N X				TIC407p
1	M K Y K S S K V A X C T L S A L M L M L S T I A T P S M S V F A A E T T S P K L N X				TIC417p
					TIC431p
					Consensus
	50	60	70	80	
41	S Q Q V I G P Y A E S Y I D I V Q D R M K Q R D R E S K L T G K P I N M Q E Q L				TIC901p
41	S Q Q A I T P Y A E S Y I D I V Q D R M K Q R D R E S K L T G K P I N M Q E Q L				TIC1201p
41	K E Q S I T P R A E S Y I D I V Q D R M K Q R D R E S K L T G K P I N M Q E Q L				TIC407p
41	N Q Q T I A Q R A E S Y I D I V Q D R M K Q R D R E S K L T G K P I N M Q E Q L				TIC417p
41	S Q Q X I T P R A E S Y I D I V Q D R M K Q R D R E S K L T G K P I N M Q E Q L				TIC431p
					Consensus
	90	100	110	120	
81	I D G W F L A R F W I F K D Q N N N H Q T N R F I S W P K D N I A S S K G Y N S				TIC901
81	I D G W F L A R F W I F K D Q N N N H Q T N R F I S W P K D N I A S S K G Y N S				TIC1201
81	I D G W F L A R F W I F K D Q N N N H Q T N R F I S W P K D N I A S S K G Y N S				TIC407
81	I D G W F L A R F W I F K D Q N N N H Q T N R F I S W P K D N I A S S K G Y N S				TIC417
81	I D G W F L A R F W I F K D Q N N N H Q T N R F I S W P K D N I A S S K G Y N S				TIC431p
					Consensus
	130	140	150	160	
121	I A E Q M G L K I E A R N D M D V T N I D V T S K T G D T I Y N G V S E L K N Y				TIC901
121	I A R Q M G L K I E A R N D M D V T N I D V T S K T G D T I Y N G V S E L K N Y				TIC1201
121	I A E Q M G L K I E A R N D M D V T N I D V T S K T G D T I Y N G V S E L K N Y				TIC407
121	I A E Q M G L K I E A R N D M D V T N I D V T S K T G D T I Y N G V S E L K N Y				TIC417
121	I A E Q M G L K I E A R N D M D V T N I D V T S K T G D T I Y N G V S E L K N Y				TIC431p
					Consensus

(57) Abstract: The present invention relates to the isolation and characterization of nucleotide sequences encoding novel insecticidal proteins secreted into the extracellular space from *Bacillus thuringiensis* and related strains. The proteins are isolated from culture supernatants of *Bacillus thuringiensis* and related strains and display insecticidal activity against coleopteran insects including Colorado potato beetle (*Lymantria dispar*) and Southern Corn Rootworm (*Diabrotica undecimpunctata*). Insecticidal proteins encoded by nucleotide sequences that hybridize to the isolated and characterized nucleotide sequences are disclosed. Also disclosed are methods of making and using transgenic cells and plants comprising the novel nucleotide sequence of the invention.



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